ConocoPhillips

H_2S Contingency Plan

November 2016

H_2S Contingency Plan Holders:

Attached is an H_2S Contingency Plan for COPC Permian Drilling working in the West Texas and Southeastern New Mexico areas operated by ConocoPhillips Company.

If you have any question regarding this plan, please call Matt Oster (830) 583-1297, or Ryan Vacarella (985) 217-7594.

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ConocoPhillips

HYDROGEN SULFIDE (H_2S) OPERATIONS

Contingency Plan
For
Permian Drilling Operations

ConocoPhillips Company

Mid-Continent Business Unit
Permian Asset Area

I.PURPOSE

The purpose of this Contingency Plan is to provide an organized plan of action for alerting and protecting the public following the release of a potentially hazardous volume of hydrogen sulfide. This plan prescribes mandatory safety procedures to be followed in the event of a release of H_2S into the atmosphere from exploration and production operations included in the scope of this plan. The extent of action taken will be determined by the supervisor and will depend on the severity and extent of H_2S release. Release of H_2S must be reported to the Drilling Superintendent and documented on the IADC and in Wellview.

II. SCOPE

This Contingency plan shall cover the West Texas and Southeastern New Mexico areas, which contain H2S gas and could result in a release where the R.O.E. is greater than 100 ppm at 50' and less than 3000' and does not include a public area and 500 ppm R.O.E. does not include a public road. Radius of exposure is defined as the maximum distance from the source of release that a specified calculated average concentration of H_2S could exist under specific weather conditions.

III. PROCEDURES

First Employee on Scene

____Assess the incident and ensure your own safety.

Note the following:

—— Location of the incident.
____Nature of the incident.
—— Wind direction and weather conditions.
____Other assistance that may be needed.

____ Call local supervisory personnel (refer to Section V: Emergency Call List) until personal contact is made with a person on the list.

____ Perform emergency assessment and response as needed. The response may include rescue and/or evacuation of personnel, shutting in a system and/or notification of nearby residents/public (refer to Section VII: Public Notification/Evacuation).

____ Secure the site.

____ Follow the direction of the On-scene Incident Commander (first ConocoPhillips supervisor arriving on-scene).

First Supervisor on Scene (ConocoPhillips On-scene Incident Commander)

—— Becomes ConocoPhillips' On-scene Incident Commander upon arrival to location.

—— Follow the principles of the **D.E.C.I.D.E.** process below to assess the incident. (Note wind direction and weather conditions and ensure everyone's safety).

DETECT the problem
ESTIMATE likely harm without intervention
CHOOSE response objectives
IDENTIFY action options
DO the best option
EVALUATE the progress

____Complete the Preliminary Emergency Information Sheet (refer to Section VIII: Forms/Reports).

____Call your supervisor (refer to Section V: Emergency Call List).

____Perform emergency response as necessary. (This may include notification & evacuation of all personnel and/or nearby residents/public (refer to Section VII: Public Notification/Evacuation), requesting assistance from ConocoPhillips personnel or outside agencies (refer to Section V: Emergency Call List) and obtaining any safety equipment that may be required (refer to Section IV: Emergency Equipment and Maintenance).

—— Notify appropriate local emergency response agencies of the incident as needed. Also notify the appropriate regulatory agencies. (refer to Section V: Emergency Call List).

—— Ensure site security.

— Set barricades and /or warning signs at or beyond the calculated 100 ppm H_2S radius of exposure (ROE). All manned barricades must be equipped with an H_2S monitor and a 2-way radio.

— Set roadblocks and staging area as determined.

—— Establish the Incident Command Structure by designating appropriate on-scene response personnel as follows:

Recording Secretary _____
Public Information Officer _____
Safety/Medical Officer _____
Decontamination Officer _____

—— Have the "Recording Secretary" begin documenting the incident on the "Incident Log" (refer to Section VIII: Forms/Reports).

—— If needed, request radio silence on all channels that use your radio tower stating that, until further notice, the channels should be used for emergency communications only.

—— Perform a Site Characterization and designate the following:

Hot Zone -- Hazardous Area
Warm Zone -- Preparation & Decontamination Area
Cold Zone -- Safe Area

AND

On-Scene Incident Command Post	(Cold Zone)
Public Relations Briefing Area	(Cold Zone)
Staging Area	(Cold Zone)
Triage Area	(Cold Zone)
Decontamination Area	(Warm Zone)

____Refer all media personnel to ConocoPhillips' On-Scene Public Information Officer (refer to Section VI: Public Media Relations).

____Coordinate the attempt to stop the release of H_2S. You should consider closing upstream and downstream valves to shut-off gas supply sources, and/or plugging or clamping leaks. Igniting escaping gas to reduce the toxicity hazard should be used **ONLY AS A LAST RESORT**. (It must first be determined if the gas can be safely ignited, taking into consideration if there is a possibility of a widespread flammable atmosphere.)

____Once the emergency is over, return the situation to normal by:

Confirming the absence of H_2S and combustible gas throughout the area,

Discontinuing the radio silence on all channels, stating that the emergency incident is over,

Removing all barricades and warning signs,

Allowing evacuees to return to the area, and

Advising all parties previously notified that the emergency has ended.

____ Ensure the proper regulatory authorities/agencies are notified of the incident (refer to Section V: Emergency Call List).

____ Clean up the site. (Be sure all contractor crews have had appropriate HAZWOPER training.)

____ Report completion of the cleanup to the Asset Environmentalist. (Environmentalist will report this to the proper State and/or Federal agencies.)

____ Fill out all required incident reports and send originals to the Safety Department. (Keep a copy for your records.)

- Company employee receiving occupational injury or illnesses.

- Company employee involved in a vehicle accident while driving a company vehicle.

- Company property that is damaged or lost.

- Accident involving the public or a contractor; includes personal injuries, vehicle accidents, and property damage. Also includes any situation, which could result in a claim against the Company.

- Hazardous Material Spill/Release Report Form

- Emergency Drill Report

____ Assist the Safety Department in the investigation of the incident. Review the factors that caused or allowed the incident to occur, and modify operating, maintenance, and/or surveillance procedures as needed. Make appropriate repairs and train or retrain employees in the use and operation of the system.

____ If this incident was simulated for practice in emergency response, complete the Emergency Drill Report found in Section VIII: Forms/Reports and submit a copy to the Drilling Manager. (Keep one copy in area files to document exercising of the plan.)

Emergency Procedures
Responsibility

In the event of a release of potentially hazardous amounts of H2S, all personnel will immediately proceed upwind/ crosswind to the nearest designated briefing area. The COPC Drilling Rep. will immediately, upon assessing the situation, set this into action by taking the proper procedures to contain the gas and notify appropriate people and agencies.

1. In an emergency situation, the Drilling Rep. on duty will have complete responsibility and will take whatever action is deemed necessary in an emergency situation to insure the personnel's safety, to protect the well and to prevent property damage.

2. The Toolpusher will assume all responsibilities of the Drilling Rep. in an emergency situation in the event the Drilling Rep. becomes incapacitated.

3. Advise each contractor, service company, and all others entering the site that H2S may be encountered and the potential hazards that may exist.

4. Authorize the evacuation of local residents if H2S threatens their safety.

5. Keep the number of persons on location to a minimum during hazardous operations.

6. Direct corrective actions to control the flow of gas.

7. Has full responsibility for igniting escaping gas to reduce the toxicity hazard.

   This should be used **ONLY AS A LAST RESORT**.

IV. EMERGENCY EQUIPMENT and MAINTENANCE

Emergency Equipment Suppliers

DXP/ Safety International – Odessa, Tx. 432.580.3770
H_2S monitors
Breathing air includes cascade systems
First aid and medical supplies
Safety equipment
H2S Specialist

Total Safety US Odessa, Tx/ Hobs, NM 432.561.5049 Odessa
H_2S monitors 575.392.2973 Hobbs
Breathing air includes cascade systems
First aid and medical supplies
Safety equipment

DXP/ Indian Fire & Safety – Hobbs, NM 575.393.3093
H_2S monitors
Breathing air including cascade systems trailer mounted
30 minute air packs
Safety Equipment

TC Safety – Odessa, Tx.
H_2S monitors 432.413.8240
Cascade systems trailer mounted
30 minute air packs
Safety Equipment
H2S Specialist

Secorp Industries – Odessa, Tx. 432.614.2565
H2S Monitor Systems
Cascade Systems
H2S Specialist
H2S, CPR, First Aid Training

Emergency Equipment and Maintenance (continued)

General Information

Materials used for repair should be suitable for use where H_2S concentrations exceed 100 ppm. In general, carbon steels having low-yield strengths and a hardness below RC-22 are suitable. The engineering staff should be consulted if any doubt exists on material specifications.

Appropriate signs should be maintained in good condition at location entrance and other locations as specified in Texas Rule 36 and NMOCD Rule 118.

All notification lists should be kept current with changes in names, telephone numbers, etc.

All shutdown devices, alarms, monitors, breathing air systems, etc., should be maintained in accordance with applicable regulations.

All personnel working in H_2S areas shall have received training on the hazards, characteristics, and properties of H_2S, and on procedures and safety equipment applicable for use in H_2S areas.

H2S Safety Equipment and Monitoring Systems

An H2S emergency response package will be maintained at locations requiring H2S monitoring. The package will contain at a minimum the following:

3 – Fixed H2S sensors located as follows:
- 1 – on the rig floor
- 1 – at the Bell Nipple
- 1 – at the Shale Shaker or Flowline

1 – Entrance Warning Sign located at the main entrance to the location, with warning signs and colored flags to determine the current status for entry into the location.

2 – Windsocks that are clearly visible.

1 – Audible warning system located on rig floor

2 – Visual warning systems (Beacon Lights)
- 1 – Located at the rig floor
- 1 – Located in the mud mixing room

Note: All alarms (audible and visual) should be set to alarm at 10 ppm.

2 - Briefing areas clearly marked
- 2 - SCBA's at each briefing area
- 1- SCBA located at the Drilling Reps office

Note:
1. **All SCBA's must be positive pressure type only!!!**
2. **All SCBA's must either be Scott or Drager brand.**
3. **All SCBA's face pieces should be size large, unless otherwise specified by the Drilling Supervisor.**

5 – Emergency Escape Paks located at Top Doghouse.
Note: Ensure provisions are included for any personnel working above rig floor in derrick.

1 – Tri or Quad gas monitor located at the Drilling Reps office. This will be used to determine if the work area if safe to re-enter prior to returning to work following any alarm.

V. EMERGENCY CALL LIST:

The following is a priority list of personnel to contact in an emergency situation:

Supervisory Personnel	Office No.	Cellphone
Drilling Supt. (Unconventional) **Scott Nicholson**	432.688.9065	432.230.8010
Field Superintendents: **Clint Case.**	432.688.6878	940.231.2839
Safety Support: **Matt Oster** **Ryan Vaccarella**	830.583.1245 985.217.7594	601.540.6988 NA
Supt Operations-SEMN/Shale Mike Neuschafer	432.688.6834	713.419.9919
MCBU Safety Coordinator **James Buzan**	432.688.6860	832.630.4320
Manger GCBU/MCBU D & C **Seth Crissman**	832.486.6191	832.513.9308

EMERGENCY CALL LIST: State Officials

Regulatory Agencies

Texas Railroad Commission (District 8) Office: 432.684.5581
Midland, Texas

New Mexico Oil Conservation Commission Office: 575.393.6161
P. O. Box 1980
Hobbs, New Mexico 88240-1980

Bureau of Land Mngt.
Carlsbad Field Office
620 E. Greene St.
Carlsbad, NM 88220

Office: 575.234.5972
Fax: 575.885.9264

EMERGENCY CALL LIST: Local Officials

Refer to the Location Information Sheet
Note: The LIS should include any area residents (i.e. rancher's house, etc)

VI. Public Media Relations

The **Public Information Officer** becomes the ConocoPhillips on-scene contact (once designated by the Phillips On-Scene Incident Commander).

Confers with Houston Office's Human Relations Representative, who is responsible for assisting in the coordination of local public relations duties.

Answer media questions honestly and **only with facts,** do not speculate about the cause, amount of damage, or the potential impact of the incident of the community, company, employees, or environment. (This information will be formally determined in the incident investigation.)

If you are comfortable answering a question or if you are unsure of the answer, use terms such as the following:

- "I do not know. I will try to find out."
- I am not qualified to answer that question, but I will try to find someone who can."
- "It is under investigation."

Note:
Do Not Say "No Comment." (This implies a cover-up.)

Do Not Disclose Names of Injured or Dead! Confer with the Houston Office's Human Relations Representative, who is responsible for providing that information.

VII. Public Notification/Evacuation

Alert and/or Evacuate People within the Exposure Area

1. Public Notification – If the escape of gas could result in a hazard to area residents, the general public, or employees, the person **first** observing the leak should take **immediate** steps to cause notification of any nearby residents. The avoidance of injury or loss of life should be of prime consideration and given top priority in all cases. If the incident is of such magnitude, or at such location as to create a hazardous situation, local authorities will be requested to assist in the evacuation and roadblocks of the designated area until the situation can be returned to normal.

   Note: Bilingual employees may be needed to assist in notification of residents.

2. Evacuation Procedures – Evacuation will proceed upwind from the source of the release of H_2S. Extreme caution should be exercised in order to avoid any depressions or low-lying areas in the terrain. The public area within the radius of exposure should be evacuated in a southwesterly and southeasterly direction so as to avoid the prevailing southern wind direction.

   Roadblocks and the staging area should be established as necessary for current wind conditions.

Note: In all situations, consideration should be given to wind direction and weather conditions. H_2S is heavier than air and can settle in low spots. Shifts in wind direction can also change the location of possible hazardous areas.

VIII. FORMS & REPORTS

I. Incident Log

II. Preliminary Emergency Information Sheet

III. Emergency Drill Report

IV. Onshore Hazardous Material Spill/Release Report Form

V. Immediate Report of Occupational Injury or Illness
Report of Accident-Public Contractor
Report of Loss or Damage to Company Property
Report of Automotive Incident

ConocoPhillips MCBU - Permian-Panhandle Gold Data

Planning - NM East State Zone - 3001
ZIA HILLS 19 109H
ZIA HILLS 19 109H

ZIA HILLS 19 109H

Plan: ZIA HILLS 19 109H_WP1

Standard Planning Report - Geographic

01 August, 2017

HOBBS OCD
NOV 29 2017
RECEIVED

Database:	EDT 14 Central Planning	**Local Co-ordinate Reference:**	Well ZIA HILLS 19 109H
Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	**TVD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Project:	Planning - NM East State Zone - 3001	**MD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Site:	ZIA HILLS 19 109H	**North Reference:**	Grid
Well:	ZIA HILLS 19 109H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ZIA HILLS 19 109H		
Design:	ZIA HILLS 19 109H_WP1		

Project	Planning - NM East State Zone - 3001, Permian Basin - New Mexico - East/South East, Planning Project for Permian wells in NM Zone 3001		
Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		Using geodetic scale factor

Site	ZIA HILLS 19 109H				
Site Position:		**Northing:**	374,653.14 usft	**Latitude:**	32° 1' 42.74 N
From:	Map	**Easting:**	690,875.32 usft	**Longitude:**	103° 43' 2.677 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.33 °

Well	ZIA HILLS 19 109H					
Well Position	**+N/-S**	0.00 usft	**Northing:**	374,653.14 usft	**Latitude:**	32° 1' 42.74 N
	+E/-W	0.00 usft	**Easting:**	690,875.32 usft	**Longitude:**	103° 43' 2.677 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,182.40 usft

Wellbore ZIA HILLS 19 109H

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2017	6/12/2017	7.09	59.83	47,853.67381244

Design	ZIA HILLS 19 109H_WP1				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	358.09

Plan Survey Tool Program **Date** 7/11/2017

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	2,400.00	ZIA HILLS 19 109H_WP1 (ZIA H	MWD - OWSG R1 MWD - Standard OWSG	
2	2,400.00	9,000.00	ZIA HILLS 19 109H_WP1 (ZIA H	MWD - OWSG R1 MWD - Standard OWSG	
3	9,000.00	9,400.00	ZIA HILLS 19 109H_WP1 (ZIA H	MWD - OWSG R1 MWD - Standard OWSG	
4	9,400.00	10,200.00	ZIA HILLS 19 109H_WP1 (ZIA H	MWD - OWSG R1 MWD - Standard OWSG	
5	10,200.00	22,124.13	ZIA HILLS 19 109H_WP1 (ZIA H	MWD - OWSG R1 MWD - Standard OWSG	

Database:	EDT 14 Central Planning	**Local Co-ordinate Reference:**	Well ZIA HILLS 19 109H
Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	**TVD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Project:	Planning - NM East State Zone - 3001	**MD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Site:	ZIA HILLS 19 109H	**North Reference:**	Grid
Well:	ZIA HILLS 19 109H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ZIA HILLS 19 109H		
Design:	ZIA HILLS 19 109H_WP1		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,743.93	3.66	204.98	2,743.77	-7.06	-3.29	1.50	1.50	0.00	204.98	
8,468.07	3.66	204.98	8,456.23	-338.20	-157.54	0.00	0.00	0.00	0.00	
8,712.00	0.00	0.00	8,700.00	-345.26	-160.83	1.50	-1.50	0.00	180.00	ZIA HILLS 19 109H_V
10,914.80	0.00	0.00	10,902.80	-345.26	-160.83	0.00	0.00	0.00	0.00	
12,039.80	90.00	359.00	11,619.00	370.83	-173.32	8.00	8.00	0.00	359.00	
22,124.13	90.00	359.00	11,619.00	10,453.62	-349.28	0.00	0.00	0.00	0.00	ZIA HILLS 19 109H_V

Database:	EDT 14 Central Planning	**Local Co-ordinate Reference:**	Well ZIA HILLS 19 109H
Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	**TVD Reference:**	WELL @ 3209.90usft (Original Well Elev)
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Site:	ZIA HILLS 19 109H	**North Reference:**	Grid
Well:	ZIA HILLS 19 109H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ZIA HILLS 19 109H		
Design:	ZIA HILLS 19 109H_WP1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
100.00	0.00	0.00	100.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
200.00	0.00	0.00	200.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
300.00	0.00	0.00	300.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
400.00	0.00	0.00	400.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
500.00	0.00	0.00	500.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
600.00	0.00	0.00	600.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
700.00	0.00	0.00	700.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
800.00	0.00	0.00	800.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
900.00	0.00	0.00	900.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,000.00	0.00	0.00	1,000.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,100.00	0.00	0.00	1,100.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,200.00	0.00	0.00	1,200.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,300.00	0.00	0.00	1,300.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,400.00	0.00	0.00	1,400.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,500.00	0.00	0.00	1,500.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,600.00	0.00	0.00	1,600.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,700.00	0.00	0.00	1,700.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,800.00	0.00	0.00	1,800.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
1,900.00	0.00	0.00	1,900.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
2,000.00	0.00	0.00	2,000.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
2,100.00	0.00	0.00	2,100.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
2,200.00	0.00	0.00	2,200.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
2,300.00	0.00	0.00	2,300.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
2,400.00	0.00	0.00	2,400.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
SURFACE									
2,500.00	0.00	0.00	2,500.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
2,600.00	1.50	204.98	2,599.99	-1.19	-0.55	374,651.95	690,874.76	32° 1' 42.73 N	103° 43' 2.684 W
2,700.00	3.00	204.98	2,699.91	-4.75	-2.21	374,648.39	690,873.11	32° 1' 42.70 N	103° 43' 2.703 W
2,743.93	3.66	204.98	2,743.77	-7.06	-3.29	374,646.08	690,872.03	32° 1' 42.67 N	103° 43' 2.716 W
2,800.00	3.66	204.98	2,799.72	-10.30	-4.80	374,642.84	690,870.52	32° 1' 42.64 N	103° 43' 2.734 W
2,900.00	3.66	204.98	2,899.52	-16.09	-7.49	374,637.05	690,867.82	32° 1' 42.59 N	103° 43' 2.765 W
3,000.00	3.66	204.98	2,999.31	-21.87	-10.19	374,631.27	690,865.13	32° 1' 42.53 N	103° 43' 2.797 W
3,100.00	3.66	204.98	3,099.11	-27.66	-12.88	374,625.48	690,862.43	32° 1' 42.47 N	103° 43' 2.829 W
3,200.00	3.66	204.98	3,198.90	-33.44	-15.58	374,619.70	690,859.74	32° 1' 42.41 N	103° 43' 2.860 W
3,300.00	3.66	204.98	3,298.70	-39.23	-18.27	374,613.91	690,857.04	32° 1' 42.36 N	103° 43' 2.892 W
3,400.00	3.66	204.98	3,398.50	-45.01	-20.97	374,608.13	690,854.35	32° 1' 42.30 N	103° 43' 2.924 W
3,500.00	3.66	204.98	3,498.29	-50.80	-23.66	374,602.34	690,851.65	32° 1' 42.24 N	103° 43' 2.955 W
3,600.00	3.66	204.98	3,598.09	-56.58	-26.36	374,596.56	690,848.96	32° 1' 42.19 N	103° 43' 2.987 W
3,700.00	3.66	204.98	3,697.89	-62.37	-29.05	374,590.77	690,846.27	32° 1' 42.13 N	103° 43' 3.019 W
3,800.00	3.66	204.98	3,797.68	-68.15	-31.75	374,584.99	690,843.57	32° 1' 42.07 N	103° 43' 3.050 W
3,900.00	3.66	204.98	3,897.48	-73.94	-34.44	374,579.21	690,840.88	32° 1' 42.01 N	103° 43' 3.082 W
4,000.00	3.66	204.98	3,997.27	-79.72	-37.14	374,573.42	690,838.18	32° 1' 41.96 N	103° 43' 3.114 W
4,100.00	3.66	204.98	4,097.07	-85.51	-39.83	374,567.64	690,835.49	32° 1' 41.90 N	103° 43' 3.145 W
4,200.00	3.66	204.98	4,196.87	-91.29	-42.53	374,561.85	690,832.79	32° 1' 41.84 N	103° 43' 3.177 W
4,300.00	3.66	204.98	4,296.66	-97.08	-45.22	374,556.07	690,830.10	32° 1' 41.79 N	103° 43' 3.209 W
4,400.00	3.66	204.98	4,396.46	-102.86	-47.92	374,550.28	690,827.40	32° 1' 41.73 N	103° 43' 3.240 W
4,500.00	3.66	204.98	4,496.25	-108.65	-50.61	374,544.50	690,824.71	32° 1' 41.67 N	103° 43' 3.272 W
4,600.00	3.66	204.98	4,596.05	-114.43	-53.30	374,538.71	690,822.01	32° 1' 41.61 N	103° 43' 3.304 W
4,700.00	3.66	204.98	4,695.85	-120.22	-56.00	374,532.93	690,819.32	32° 1' 41.56 N	103° 43' 3.336 W
4,800.00	3.66	204.98	4,795.64	-126.00	-58.69	374,527.14	690,816.62	32° 1' 41.50 N	103° 43' 3.367 W
4,900.00	3.66	204.98	4,895.44	-131.79	-61.39	374,521.36	690,813.93	32° 1' 41.44 N	103° 43' 3.399 W
5,000.00	3.66	204.98	4,995.24	-137.57	-64.08	374,515.57	690,811.23	32° 1' 41.39 N	103° 43' 3.431 W
5,100.00	3.66	204.98	5,095.03	-143.36	-66.78	374,509.79	690,808.54	32° 1' 41.33 N	103° 43' 3.462 W

Database:	EDT 14 Central Planning	**Local Co-ordinate Reference:**	Well ZIA HILLS 19 109H
Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	**TVD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Project:	Planning - NM East State Zone - 3001	**MD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Site:	ZIA HILLS 19 109H	**North Reference:**	Grid
Well:	ZIA HILLS 19 109H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ZIA HILLS 19 109H		
Design:	ZIA HILLS 19 109H_WP1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,200.00	3.66	204.98	5,194.83	-149.14	-69.47	374,504.00	690,805.85	32° 1' 41.27 N	103° 43' 3.494 W
5,300.00	3.66	204.98	5,294.62	-154.93	-72.17	374,498.22	690,803.15	32° 1' 41.22 N	103° 43' 3.526 W
5,400.00	3.66	204.98	5,394.42	-160.71	-74.86	374,492.43	690,800.46	32° 1' 41.16 N	103° 43' 3.557 W
5,500.00	3.66	204.98	5,494.22	-166.50	-77.56	374,486.65	690,797.76	32° 1' 41.10 N	103° 43' 3.589 W
5,600.00	3.66	204.98	5,594.01	-172.28	-80.25	374,480.87	690,795.07	32° 1' 41.04 N	103° 43' 3.621 W
5,700.00	3.66	204.98	5,693.81	-178.07	-82.95	374,475.08	690,792.37	32° 1' 40.99 N	103° 43' 3.652 W
5,800.00	3.66	204.98	5,793.60	-183.85	-85.64	374,469.30	690,789.68	32° 1' 40.93 N	103° 43' 3.684 W
5,900.00	3.66	204.98	5,893.40	-189.64	-88.34	374,463.51	690,786.98	32° 1' 40.87 N	103° 43' 3.716 W
6,000.00	3.66	204.98	5,993.20	-195.42	-91.03	374,457.73	690,784.29	32° 1' 40.82 N	103° 43' 3.747 W
6,100.00	3.66	204.98	6,092.99	-201.21	-93.73	374,451.94	690,781.59	32° 1' 40.76 N	103° 43' 3.779 W
6,200.00	3.66	204.98	6,192.79	-206.99	-96.42	374,446.16	690,778.90	32° 1' 40.70 N	103° 43' 3.811 W
6,300.00	3.66	204.98	6,292.59	-212.78	-99.12	374,440.37	690,776.20	32° 1' 40.64 N	103° 43' 3.842 W
6,400.00	3.66	204.98	6,392.38	-218.56	-101.81	374,434.59	690,773.51	32° 1' 40.59 N	103° 43' 3.874 W
6,500.00	3.66	204.98	6,492.18	-224.35	-104.51	374,428.80	690,770.82	32° 1' 40.53 N	103° 43' 3.906 W
6,600.00	3.66	204.98	6,591.97	-230.13	-107.20	374,423.02	690,768.12	32° 1' 40.47 N	103° 43' 3.938 W
6,700.00	3.66	204.98	6,691.77	-235.92	-109.89	374,417.23	690,765.43	32° 1' 40.42 N	103° 43' 3.969 W
6,800.00	3.66	204.98	6,791.57	-241.70	-112.59	374,411.45	690,762.73	32° 1' 40.36 N	103° 43' 4.001 W
6,900.00	3.66	204.98	6,891.36	-247.49	-115.28	374,405.66	690,760.04	32° 1' 40.30 N	103° 43' 4.033 W
7,000.00	3.66	204.98	6,991.16	-253.27	-117.98	374,399.88	690,757.34	32° 1' 40.24 N	103° 43' 4.064 W
7,100.00	3.66	204.98	7,090.95	-259.06	-120.67	374,394.09	690,754.65	32° 1' 40.19 N	103° 43' 4.096 W
7,200.00	3.66	204.98	7,190.75	-264.84	-123.37	374,388.31	690,751.95	32° 1' 40.13 N	103° 43' 4.128 W
7,300.00	3.66	204.98	7,290.55	-270.63	-126.06	374,382.53	690,749.26	32° 1' 40.07 N	103° 43' 4.159 W
7,400.00	3.66	204.98	7,390.34	-276.41	-128.76	374,376.74	690,746.56	32° 1' 40.02 N	103° 43' 4.191 W
7,500.00	3.66	204.98	7,490.14	-282.20	-131.45	374,370.96	690,743.87	32° 1' 39.96 N	103° 43' 4.223 W
7,600.00	3.66	204.98	7,589.94	-287.98	-134.15	374,365.17	690,741.17	32° 1' 39.90 N	103° 43' 4.254 W
7,700.00	3.66	204.98	7,689.73	-293.77	-136.84	374,359.39	690,738.48	32° 1' 39.84 N	103° 43' 4.286 W
7,800.00	3.66	204.98	7,789.53	-299.55	-139.54	374,353.60	690,735.79	32° 1' 39.79 N	103° 43' 4.318 W
7,900.00	3.66	204.98	7,889.32	-305.34	-142.23	374,347.82	690,733.09	32° 1' 39.73 N	103° 43' 4.349 W
8,000.00	3.66	204.98	7,989.12	-311.12	-144.93	374,342.03	690,730.40	32° 1' 39.67 N	103° 43' 4.381 W
8,100.00	3.66	204.98	8,088.92	-316.91	-147.62	374,336.25	690,727.70	32° 1' 39.62 N	103° 43' 4.413 W
8,200.00	3.66	204.98	8,188.71	-322.69	-150.32	374,330.46	690,725.01	32° 1' 39.56 N	103° 43' 4.444 W
8,300.00	3.66	204.98	8,288.51	-328.48	-153.01	374,324.68	690,722.31	32° 1' 39.50 N	103° 43' 4.476 W
8,400.00	3.66	204.98	8,388.30	-334.26	-155.71	374,318.89	690,719.62	32° 1' 39.45 N	103° 43' 4.508 W
8,468.07	3.66	204.98	8,456.23	-338.20	-157.54	374,314.96	690,717.78	32° 1' 39.41 N	103° 43' 4.529 W
8,500.00	3.18	204.98	8,488.11	-339.93	-158.34	374,313.23	690,716.98	32° 1' 39.39 N	103° 43' 4.539 W
8,600.00	1.68	204.98	8,588.02	-343.77	-160.13	374,309.39	690,715.19	32° 1' 39.35 N	103° 43' 4.560 W
8,700.00	0.18	204.98	8,688.00	-345.24	-160.82	374,307.92	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
8,712.00	0.00	0.00	8,700.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
8,800.00	0.00	0.00	8,788.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
8,900.00	0.00	0.00	8,888.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,000.00	0.00	0.00	8,988.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,100.00	0.00	0.00	9,088.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,200.00	0.00	0.00	9,188.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,300.00	0.00	0.00	9,288.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,400.00	0.00	0.00	9,388.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
INT									
9,500.00	0.00	0.00	9,488.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,600.00	0.00	0.00	9,588.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,700.00	0.00	0.00	9,688.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,800.00	0.00	0.00	9,788.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
9,900.00	0.00	0.00	9,888.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,000.00	0.00	0.00	9,988.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,100.00	0.00	0.00	10,088.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,200.00	0.00	0.00	10,188.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W

Database:	EDT 14 Central Planning	**Local Co-ordinate Reference:**	Well ZIA HILLS 19 109H
Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	**TVD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Project:	Planning - NM East State Zone - 3001	**MD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Site:	ZIA HILLS 19 109H	**North Reference:**	Grid
Well:	ZIA HILLS 19 109H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ZIA HILLS 19 109H		
Design:	ZIA HILLS 19 109H_WP1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,300.00	0.00	0.00	10,288.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,400.00	0.00	0.00	10,388.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,500.00	0.00	0.00	10,488.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,600.00	0.00	0.00	10,588.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,700.00	0.00	0.00	10,688.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,800.00	0.00	0.00	10,788.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,900.00	0.00	0.00	10,888.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
10,914.80	0.00	0.00	10,902.80	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
11,000.00	6.82	359.00	10,987.80	-340.20	-160.92	374,312.96	690,714.41	32° 1' 39.39 N	103° 43' 4.569 W
11,100.00	14.82	359.00	11,085.94	-321.45	-161.24	374,331.70	690,714.08	32° 1' 39.57 N	103° 43' 4.571 W
11,200.00	22.82	359.00	11,180.52	-289.23	-161.81	374,363.92	690,713.52	32° 1' 39.89 N	103° 43' 4.576 W
11,300.00	30.82	359.00	11,269.70	-244.16	-162.59	374,408.99	690,712.73	32° 1' 40.34 N	103° 43' 4.582 W
11,400.00	38.82	359.00	11,351.73	-187.12	-163.59	374,466.03	690,711.74	32° 1' 40.90 N	103° 43' 4.590 W
11,500.00	46.82	359.00	11,425.02	-119.22	-164.77	374,533.92	690,710.55	32° 1' 41.57 N	103° 43' 4.599 W
11,600.00	54.82	359.00	11,488.15	-41.78	-166.12	374,611.36	690,709.20	32° 1' 42.34 N	103° 43' 4.609 W
11,700.00	62.82	359.00	11,539.89	43.68	-167.62	374,696.82	690,707.71	32° 1' 43.19 N	103° 43' 4.621 W
11,800.00	70.82	359.00	11,579.23	135.52	-169.22	374,788.65	690,706.11	32° 1' 44.09 N	103° 43' 4.634 W
11,900.00	78.82	359.00	11,605.40	231.94	-170.90	374,885.06	690,704.42	32° 1' 45.05 N	103° 43' 4.647 W
12,000.00	86.82	359.00	11,617.89	331.05	-172.63	374,984.18	690,702.69	32° 1' 46.03 N	103° 43' 4.660 W
12,039.80	90.00	359.00	11,619.00	370.83	-173.32	375,023.95	690,702.00	32° 1' 46.42 N	103° 43' 4.666 W
12,100.00	90.00	359.00	11,619.00	431.02	-174.37	375,084.14	690,700.95	32° 1' 47.02 N	103° 43' 4.674 W
12,200.00	90.00	359.00	11,619.00	531.00	-176.12	375,184.12	690,699.20	32° 1' 48.01 N	103° 43' 4.688 W
12,300.00	90.00	359.00	11,619.00	630.99	-177.86	375,284.10	690,697.46	32° 1' 49.00 N	103° 43' 4.701 W
12,400.00	90.00	359.00	11,619.00	730.97	-179.61	375,384.08	690,695.72	32° 1' 49.99 N	103° 43' 4.715 W
12,500.00	90.00	359.00	11,619.00	830.96	-181.35	375,484.06	690,693.97	32° 1' 50.98 N	103° 43' 4.729 W
12,600.00	90.00	359.00	11,619.00	930.94	-183.10	375,584.04	690,692.23	32° 1' 51.97 N	103° 43' 4.742 W
12,700.00	90.00	359.00	11,619.00	1,030.93	-184.84	375,684.02	690,690.48	32° 1' 52.96 N	103° 43' 4.756 W
12,800.00	90.00	359.00	11,619.00	1,130.91	-186.59	375,784.00	690,688.74	32° 1' 53.95 N	103° 43' 4.770 W
12,900.00	90.00	359.00	11,619.00	1,230.90	-188.33	375,883.98	690,686.99	32° 1' 54.94 N	103° 43' 4.783 W
13,000.00	90.00	359.00	11,619.00	1,330.88	-190.08	375,983.96	690,685.25	32° 1' 55.92 N	103° 43' 4.797 W
13,100.00	90.00	359.00	11,619.00	1,430.87	-191.82	376,083.94	690,683.50	32° 1' 56.91 N	103° 43' 4.811 W
13,200.00	90.00	359.00	11,619.00	1,530.85	-193.57	376,183.91	690,681.76	32° 1' 57.90 N	103° 43' 4.824 W
13,300.00	90.00	359.00	11,619.00	1,630.84	-195.31	376,283.89	690,680.01	32° 1' 58.89 N	103° 43' 4.838 W
13,400.00	90.00	359.00	11,619.00	1,730.82	-197.06	376,383.87	690,678.27	32° 1' 59.88 N	103° 43' 4.851 W
13,500.00	90.00	359.00	11,619.00	1,830.81	-198.80	376,483.85	690,676.52	32° 2' 0.87 N	103° 43' 4.865 W
13,600.00	90.00	359.00	11,619.00	1,930.79	-200.55	376,583.83	690,674.78	32° 2' 1.86 N	103° 43' 4.879 W
13,700.00	90.00	359.00	11,619.00	2,030.78	-202.29	376,683.81	690,673.03	32° 2' 2.85 N	103° 43' 4.892 W
13,800.00	90.00	359.00	11,619.00	2,130.76	-204.04	376,783.79	690,671.29	32° 2' 3.84 N	103° 43' 4.906 W
13,900.00	90.00	359.00	11,619.00	2,230.75	-205.78	376,883.77	690,669.54	32° 2' 4.83 N	103° 43' 4.920 W
14,000.00	90.00	359.00	11,619.00	2,330.73	-207.53	376,983.75	690,667.80	32° 2' 5.82 N	103° 43' 4.933 W
14,100.00	90.00	359.00	11,619.00	2,430.71	-209.27	377,083.73	690,666.05	32° 2' 6.81 N	103° 43' 4.947 W
14,200.00	90.00	359.00	11,619.00	2,530.70	-211.02	377,183.71	690,664.31	32° 2' 7.80 N	103° 43' 4.961 W
14,300.00	90.00	359.00	11,619.00	2,630.68	-212.76	377,283.69	690,662.57	32° 2' 8.79 N	103° 43' 4.974 W
14,400.00	90.00	359.00	11,619.00	2,730.67	-214.51	377,383.67	690,660.82	32° 2' 9.78 N	103° 43' 4.988 W
14,500.00	90.00	359.00	11,619.00	2,830.65	-216.25	377,483.65	690,659.08	32° 2' 10.77 N	103° 43' 5.002 W
14,600.00	90.00	359.00	11,619.00	2,930.64	-217.99	377,583.63	690,657.33	32° 2' 11.76 N	103° 43' 5.015 W
14,700.00	90.00	359.00	11,619.00	3,030.62	-219.74	377,683.61	690,655.59	32° 2' 12.75 N	103° 43' 5.029 W
14,800.00	90.00	359.00	11,619.00	3,130.61	-221.48	377,783.59	690,653.84	32° 2' 13.74 N	103° 43' 5.043 W
14,900.00	90.00	359.00	11,619.00	3,230.59	-223.23	377,883.57	690,652.10	32° 2' 14.73 N	103° 43' 5.056 W
15,000.00	90.00	359.00	11,619.00	3,330.58	-224.97	377,983.55	690,650.35	32° 2' 15.72 N	103° 43' 5.070 W
15,100.00	90.00	359.00	11,619.00	3,430.56	-226.72	378,083.53	690,648.61	32° 2' 16.70 N	103° 43' 5.084 W
15,200.00	90.00	359.00	11,619.00	3,530.55	-228.46	378,183.51	690,646.86	32° 2' 17.69 N	103° 43' 5.097 W
15,300.00	90.00	359.00	11,619.00	3,630.53	-230.21	378,283.49	690,645.12	32° 2' 18.68 N	103° 43' 5.111 W
15,400.00	90.00	359.00	11,619.00	3,730.52	-231.95	378,383.47	690,643.37	32° 2' 19.67 N	103° 43' 5.125 W

Database:	EDT 14 Central Planning	**Local Co-ordinate Reference:**	Well ZIA HILLS 19 109H
Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	**TVD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Project:	Planning - NM East State Zone - 3001	**MD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Site:	ZIA HILLS 19 109H	**North Reference:**	Grid
Well:	ZIA HILLS 19 109H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ZIA HILLS 19 109H		
Design:	ZIA HILLS 19 109H_WP1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
15,500.00	90.00	359.00	11,619.00	3,830.50	-233.70	378,483.45	690,641.63	32° 2' 20.66 N	103° 43' 5.138 W
15,600.00	90.00	359.00	11,619.00	3,930.49	-235.44	378,583.43	690,639.88	32° 2' 21.65 N	103° 43' 5.152 W
15,700.00	90.00	359.00	11,619.00	4,030.47	-237.19	378,683.41	690,638.14	32° 2' 22.64 N	103° 43' 5.165 W
15,800.00	90.00	359.00	11,619.00	4,130.46	-238.93	378,783.39	690,636.39	32° 2' 23.63 N	103° 43' 5.179 W
15,900.00	90.00	359.00	11,619.00	4,230.44	-240.68	378,883.37	690,634.65	32° 2' 24.62 N	103° 43' 5.193 W
16,000.00	90.00	359.00	11,619.00	4,330.43	-242.42	378,983.35	690,632.90	32° 2' 25.61 N	103° 43' 5.206 W
16,100.00	90.00	359.00	11,619.00	4,430.41	-244.17	379,083.33	690,631.16	32° 2' 26.60 N	103° 43' 5.220 W
16,200.00	90.00	359.00	11,619.00	4,530.40	-245.91	379,183.31	690,629.42	32° 2' 27.59 N	103° 43' 5.234 W
16,300.00	90.00	359.00	11,619.00	4,630.38	-247.66	379,283.29	690,627.67	32° 2' 28.58 N	103° 43' 5.247 W
16,400.00	90.00	359.00	11,619.00	4,730.36	-249.40	379,383.27	690,625.93	32° 2' 29.57 N	103° 43' 5.261 W
16,500.00	90.00	359.00	11,619.00	4,830.35	-251.15	379,483.25	690,624.18	32° 2' 30.56 N	103° 43' 5.275 W
16,600.00	90.00	359.00	11,619.00	4,930.33	-252.89	379,583.23	690,622.44	32° 2' 31.55 N	103° 43' 5.288 W
16,700.00	90.00	359.00	11,619.00	5,030.32	-254.64	379,683.21	690,620.69	32° 2' 32.54 N	103° 43' 5.302 W
16,800.00	90.00	359.00	11,619.00	5,130.30	-256.38	379,783.19	690,618.95	32° 2' 33.53 N	103° 43' 5.316 W
16,900.00	90.00	359.00	11,619.00	5,230.29	-258.13	379,883.17	690,617.20	32° 2' 34.52 N	103° 43' 5.329 W
17,000.00	90.00	359.00	11,619.00	5,330.27	-259.87	379,983.15	690,615.46	32° 2' 35.51 N	103° 43' 5.343 W
17,100.00	90.00	359.00	11,619.00	5,430.26	-261.62	380,083.13	690,613.71	32° 2' 36.49 N	103° 43' 5.357 W
17,200.00	90.00	359.00	11,619.00	5,530.24	-263.36	380,183.11	690,611.97	32° 2' 37.48 N	103° 43' 5.370 W
17,300.00	90.00	359.00	11,619.00	5,630.23	-265.10	380,283.09	690,610.22	32° 2' 38.47 N	103° 43' 5.384 W
17,400.00	90.00	359.00	11,619.00	5,730.21	-266.85	380,383.07	690,608.48	32° 2' 39.46 N	103° 43' 5.398 W
17,500.00	90.00	359.00	11,619.00	5,830.20	-268.59	380,483.05	690,606.73	32° 2' 40.45 N	103° 43' 5.411 W
17,600.00	90.00	359.00	11,619.00	5,930.18	-270.34	380,583.03	690,604.99	32° 2' 41.44 N	103° 43' 5.425 W
17,700.00	90.00	359.00	11,619.00	6,030.17	-272.08	380,683.01	690,603.24	32° 2' 42.43 N	103° 43' 5.439 W
17,800.00	90.00	359.00	11,619.00	6,130.15	-273.83	380,782.99	690,601.50	32° 2' 43.42 N	103° 43' 5.452 W
17,900.00	90.00	359.00	11,619.00	6,230.14	-275.57	380,882.97	690,599.76	32° 2' 44.41 N	103° 43' 5.466 W
18,000.00	90.00	359.00	11,619.00	6,330.12	-277.32	380,982.95	690,598.01	32° 2' 45.40 N	103° 43' 5.480 W
18,100.00	90.00	359.00	11,619.00	6,430.11	-279.06	381,082.93	690,596.27	32° 2' 46.39 N	103° 43' 5.493 W
18,200.00	90.00	359.00	11,619.00	6,530.09	-280.81	381,182.91	690,594.52	32° 2' 47.38 N	103° 43' 5.507 W
18,300.00	90.00	359.00	11,619.00	6,630.08	-282.55	381,282.89	690,592.78	32° 2' 48.37 N	103° 43' 5.520 W
18,400.00	90.00	359.00	11,619.00	6,730.06	-284.30	381,382.87	690,591.03	32° 2' 49.36 N	103° 43' 5.534 W
18,500.00	90.00	359.00	11,619.00	6,830.05	-286.04	381,482.85	690,589.29	32° 2' 50.35 N	103° 43' 5.548 W
18,600.00	90.00	359.00	11,619.00	6,930.03	-287.79	381,582.83	690,587.54	32° 2' 51.34 N	103° 43' 5.561 W
18,700.00	90.00	359.00	11,619.00	7,030.01	-289.53	381,682.81	690,585.80	32° 2' 52.33 N	103° 43' 5.575 W
18,800.00	90.00	359.00	11,619.00	7,130.00	-291.28	381,782.79	690,584.05	32° 2' 53.32 N	103° 43' 5.589 W
18,900.00	90.00	359.00	11,619.00	7,229.98	-293.02	381,882.77	690,582.31	32° 2' 54.31 N	103° 43' 5.602 W
19,000.00	90.00	359.00	11,619.00	7,329.97	-294.77	381,982.75	690,580.56	32° 2' 55.30 N	103° 43' 5.616 W
19,100.00	90.00	359.00	11,619.00	7,429.95	-296.51	382,082.73	690,578.82	32° 2' 56.28 N	103° 43' 5.630 W
19,200.00	90.00	359.00	11,619.00	7,529.94	-298.26	382,182.71	690,577.07	32° 2' 57.27 N	103° 43' 5.643 W
19,300.00	90.00	359.00	11,619.00	7,629.92	-300.00	382,282.69	690,575.33	32° 2' 58.26 N	103° 43' 5.657 W
19,400.00	90.00	359.00	11,619.00	7,729.91	-301.75	382,382.67	690,573.58	32° 2' 59.25 N	103° 43' 5.671 W
19,500.00	90.00	359.00	11,619.00	7,829.89	-303.49	382,482.65	690,571.84	32° 3' 0.24 N	103° 43' 5.684 W
19,600.00	90.00	359.00	11,619.00	7,929.88	-305.24	382,582.63	690,570.09	32° 3' 1.23 N	103° 43' 5.698 W
19,700.00	90.00	359.00	11,619.00	8,029.86	-306.98	382,682.61	690,568.35	32° 3' 2.22 N	103° 43' 5.712 W
19,800.00	90.00	359.00	11,619.00	8,129.85	-308.73	382,782.59	690,566.61	32° 3' 3.21 N	103° 43' 5.725 W
19,900.00	90.00	359.00	11,619.00	8,229.83	-310.47	382,882.57	690,564.86	32° 3' 4.20 N	103° 43' 5.739 W
20,000.00	90.00	359.00	11,619.00	8,329.82	-312.22	382,982.55	690,563.12	32° 3' 5.19 N	103° 43' 5.753 W
20,100.00	90.00	359.00	11,619.00	8,429.80	-313.96	383,082.53	690,561.37	32° 3' 6.18 N	103° 43' 5.766 W
20,170.00	90.00	359.00	11,619.00	8,499.79	-315.18	383,152.51	690,560.15	32° 3' 6.87 N	103° 43' 5.776 W
PROD									
20,200.00	90.00	359.00	11,619.00	8,529.79	-315.70	383,182.51	690,559.63	32° 3' 7.17 N	103° 43' 5.780 W
20,300.00	90.00	359.00	11,619.00	8,629.77	-317.45	383,282.49	690,557.88	32° 3' 8.16 N	103° 43' 5.794 W
20,400.00	90.00	359.00	11,619.00	8,729.76	-319.19	383,382.46	690,556.14	32° 3' 9.15 N	103° 43' 5.807 W
20,500.00	90.00	359.00	11,619.00	8,829.74	-320.94	383,482.44	690,554.39	32° 3' 10.14 N	103° 43' 5.821 W
20,600.00	90.00	359.00	11,619.00	8,929.73	-322.68	383,582.42	690,552.65	32° 3' 11.13 N	103° 43' 5.835 W

Database:	EDT 14 Central Planning	**Local Co-ordinate Reference:**	Well ZIA HILLS 19 109H
Company:	ConocoPhillips MCBU - Permian-Panhandle Gold Data	**TVD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Project:	Planning - NM East State Zone - 3001	**MD Reference:**	WELL @ 3209.90usft (Original Well Elev)
Site:	ZIA HILLS 19 109H	**North Reference:**	Grid
Well:	ZIA HILLS 19 109H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	ZIA HILLS 19 109H		
Design:	ZIA HILLS 19 109H_WP1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,700.00	90.00	359.00	11,619.00	9,029.71	-324.43	383,682.40	690,550.90	32° 3' 12.12 N	103° 43' 5.848 W
20,800.00	90.00	359.00	11,619.00	9,129.70	-326.17	383,782.38	690,549.16	32° 3' 13.11 N	103° 43' 5.862 W
20,900.00	90.00	359.00	11,619.00	9,229.68	-327.92	383,882.36	690,547.41	32° 3' 14.10 N	103° 43' 5.875 W
21,000.00	90.00	359.00	11,619.00	9,329.66	-329.66	383,982.34	690,545.67	32° 3' 15.09 N	103° 43' 5.889 W
21,100.00	90.00	359.00	11,619.00	9,429.65	-331.41	384,082.32	690,543.92	32° 3' 16.08 N	103° 43' 5.903 W
21,200.00	90.00	359.00	11,619.00	9,529.63	-333.15	384,182.30	690,542.18	32° 3' 17.06 N	103° 43' 5.916 W
21,300.00	90.00	359.00	11,619.00	9,629.62	-334.90	384,282.28	690,540.43	32° 3' 18.05 N	103° 43' 5.930 W
21,400.00	90.00	359.00	11,619.00	9,729.60	-336.64	384,382.26	690,538.69	32° 3' 19.04 N	103° 43' 5.944 W
21,500.00	90.00	359.00	11,619.00	9,829.59	-338.39	384,482.24	690,536.94	32° 3' 20.03 N	103° 43' 5.957 W
21,600.00	90.00	359.00	11,619.00	9,929.57	-340.13	384,582.22	690,535.20	32° 3' 21.02 N	103° 43' 5.971 W
21,700.00	90.00	359.00	11,619.00	10,029.56	-341.88	384,682.20	690,533.46	32° 3' 22.01 N	103° 43' 5.985 W
21,800.00	90.00	359.00	11,619.00	10,129.54	-343.62	384,782.18	690,531.71	32° 3' 23.00 N	103° 43' 5.998 W
21,900.00	90.00	359.00	11,619.00	10,229.53	-345.37	384,882.16	690,529.97	32° 3' 23.99 N	103° 43' 6.012 W
22,000.00	90.00	359.00	11,619.00	10,329.51	-347.11	384,982.14	690,528.22	32° 3' 24.98 N	103° 43' 6.026 W
22,100.00	90.00	359.00	11,619.00	10,429.50	-348.86	385,082.12	690,526.48	32° 3' 25.97 N	103° 43' 6.039 W
22,124.13	90.00	359.00	11,619.00	10,453.62	-349.28	385,106.25	690,526.06	32° 3' 26.21 N	103° 43' 6.043 W

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
ZIA HILLS 19 109H_WP - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	374,653.14	690,875.32	32° 1' 42.74 N	103° 43' 2.677 W
ZIA HILLS 19 109H_WP - plan hits target center - Point	0.00	0.00	8,700.00	-345.26	-160.83	374,307.90	690,714.50	32° 1' 39.34 N	103° 43' 4.568 W
ZIA HILLS 19 109H_WP - plan hits target center - Point	0.00	0.00	11,619.00	10,453.62	-349.28	385,106.25	690,526.06	32° 3' 26.21 N	103° 43' 6.043 W
ZIA HILLS 19 109H_WP - plan misses target center by 0.27usft at 21844.15usft MD (11619.00 TVD, 10173.69 N, -344.39 E) - Point	0.00	0.00	11,619.00	10,173.68	-344.67	384,826.32	690,530.67	32° 3' 23.44 N	103° 43' 6.008 W

Casing Points

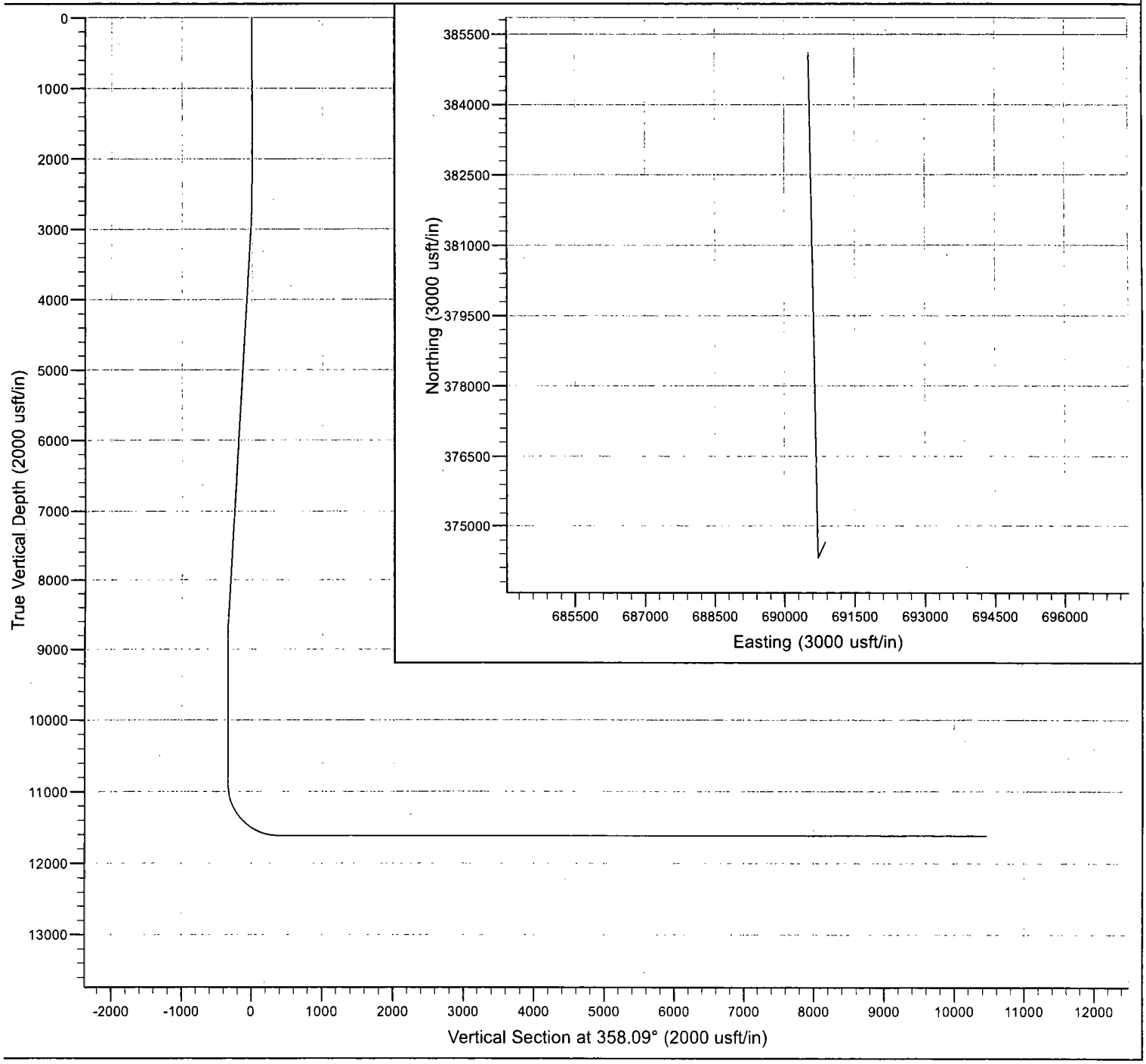
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,400.00	2,400.00	SURFACE	10-3/4	14-3/4
9,400.00	9,388.00	INT	8-5/8	10-5/8
20,170.00	11,619.00	PROD	5-1/2	7-7/8

CONOCOPHILLIPS COMPANY

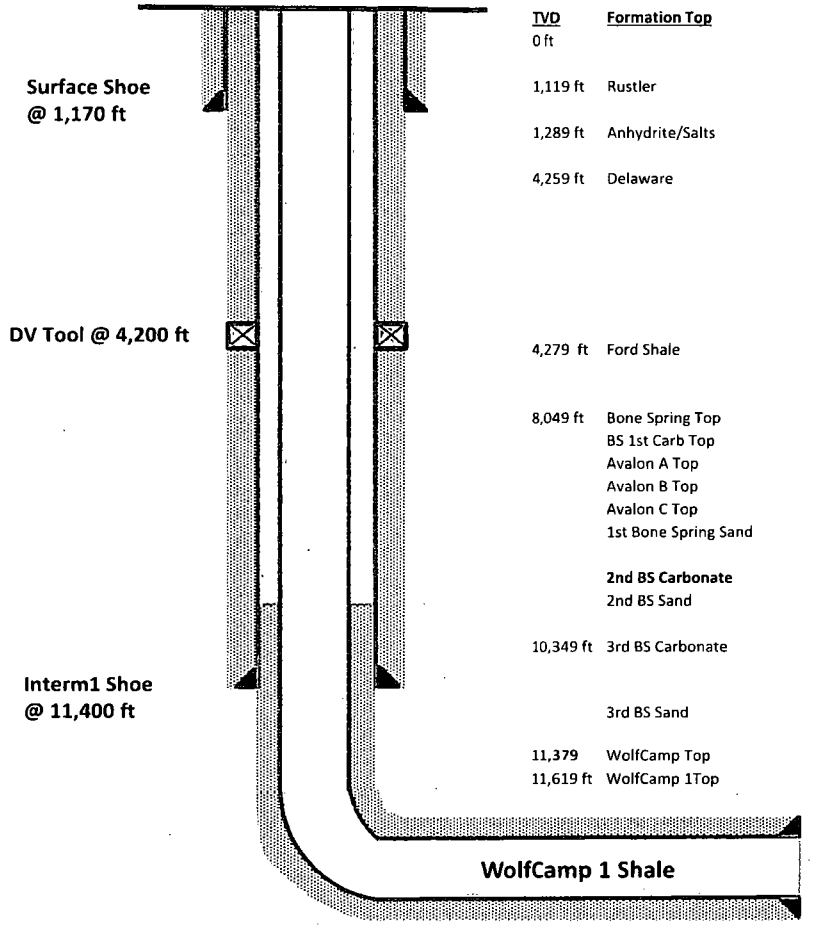
Well: ZIA HILLS 19 109H

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DIeg	TFace	VSect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	2500.00	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00
3	2743.93	3.66	204.98	2743.77	-7.06	-3.29	1.50	204.98	-6.94
4	8468.07	3.66	204.98	8456.23	-338.20	-157.54	0.00	0.00	-332.75
5	8712.00	0.00	0.00	8700.00	-345.26	-160.83	1.50	180.00	-339.69
6	10914.80	0.00	0.00	10902.80	-345.26	-160.83	0.00	0.00	-339.69
7	12039.80	90.00	359.00	11619.00	370.83	-173.32	8.00	359.00	376.41
8	22124.13	90.00	359.00	11619.00	10453.62	-349.28	0.00	0.00	10459.46



Wellbore Schematic



TVD	Formation Top
0 ft	
1,119 ft	Rustler
1,289 ft	Anhydrite/Salts
4,259 ft	Delaware
4,279 ft	Ford Shale
8,049 ft	Bone Spring Top
	BS 1st Carb Top
	Avalon A Top
	Avalon B Top
	Avalon C Top
	1st Bone Spring Sand
	2nd BS Carbonate
	2nd BS Sand
10,349 ft	3rd BS Carbonate
	3rd BS Sand
11,379	WolfCamp Top
11,619 ft	WolfCamp 1Top
22,124 ft	**TD / Prod Shoe**
~9,500 ft	**Lateral**

- Surface Section (Pre-set):
  - Objective: Protect fresh water horizons.
  - Drill 14-3/4" hole to +/- 1,170 ft. "Rustler"
  - Mud weight: 8.6 – 9.0 ppg FW-Native Mud
  - **Set 11-3/4" 47# J-55 BTC casing.**
  - Cement to surface.
- Intermediate2 Section:
  - Objective: Isolate depleted/weak formations above BS2C-BS3S.
  - Drill 10-5/8" hole to +/- 11,400 ft. (30 deg Incl)
  - **Mud weight: 8.6 – 9.4 ppg OBM**
  - **Set 8-5/8" 32# P-110 BTC casing.**
  - 2-stage Cement to surface – DV Tool @ 4200 ft
- Production Section:
  - Objective: Provide zonal isolation of production interval and provide medium for stimulation.
  - Drill 7-7/8" hole to +/-22,124 "Production TD"
  - **Mud Weight: 9.5 – 12.0 ppg OBM**
  - **Set 5-1/2" 20.0# P-110 TXP casing.**
  - Cement lap 500 ft above previous shoe (near KOP).

Surface Use Plan of Operations

Introduction

The following surface use plan of operations will be followed and carried out once the APD is approved. No other disturbance will be created other than what was submitted in this surface use plan. If any other surface disturbance is needed after the APD is approved, a BLM approved sundry notice or right of way application will be acquired prior to any new surface disturbance.

Before any surface disturbance is created, stakes or flagging will be installed to mark boundaries of permitted areas of disturbance, including soils storage areas. As necessary, slope, grade, and other construction control stakes will be placed to ensure construction in accordance with the surface use plan. All boundary markers will be maintained in place until final construction cleanup is completed. If disturbance boundary markers are disturbed or knocked down, they will be replaced before construction proceeds.

If terms and conditions are attached to the approved APD and amend any of the proposed actions in this surface use plan, we will adhere to the terms and conditions.

1. Existing Roads

a. The existing access road route to the proposed project is depicted on Access Road Map, TOPO A & Access Road Map TOPO B. Improvements to the driving surface will be done where necessary. No new surface disturbance will be done, unless otherwise noted in the New or Reconstructed Access Roads section of this surface use plan.

b. The existing access road route to the proposed project does not cross lease or unit boundaries, so a BLM right-of-way grant will not be acquired for this proposed road route.

c. The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattleguards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use.

d. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

2. New or Reconstructed Access Roads

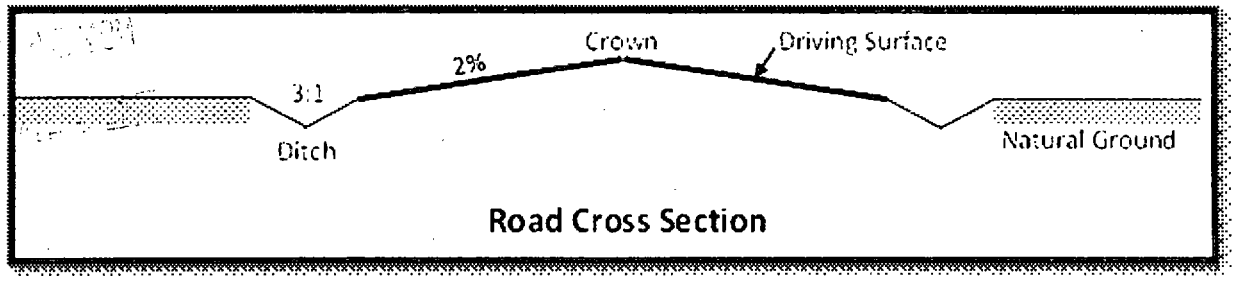
a. An access road will be needed for this proposed project. See the survey plat for the location of the access road.

b. The length of access road needed to be constructed for this proposed project is about 582 feet.

c. The maximum driving width of the access road will be 30 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. All areas outside of the driving surface will be revegetated.

d. The access road will be constructed with 6 inches of compacted Caliche.

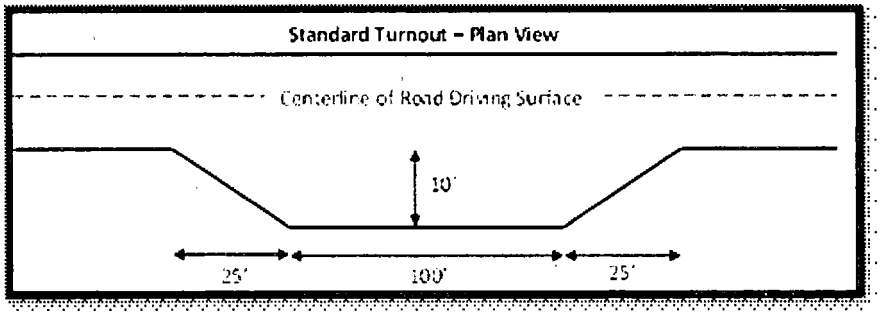
e. When the road travels on fairly level ground, the road will be crowned and ditched with a 2% slope from the tip of the road crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. See Road Cross Section diagram below.



f. The access road will be constructed with a ditch on each side of the road.

g. The maximum grade for the access road will be 1 percent.

h. Turnouts will be constructed for the proposed access road and will be constructed to the dimensions shown in the diagram below. See survey plat or map for location of the turnouts.



i. No cattleguards will be installed for this proposed access road.

j. Since the proposed access road crosses lease boundaries, a right-of-way will be required for the access road. A right-of-way grant will be applied for through the BLM. The access road will not be constructed until an approved BLM right-of-way grant is acquired.

k. No culverts will be constructed for this proposed access road.

l. No low water crossings will be constructed for the access road.

m. Since the access road is on level ground, no lead-off ditches will be constructed for the proposed access road.

n. Newly constructed or reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management, will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road.

o. The access road and existing road will be 30' wide for a 20' wide drivable surface (to accommodate the rig) and 5' on each side. 582' of road is new road and the remainder is existing road that will be upgraded.

3. Location of Existing Wells

a. Zia Hills 19 Federal COM 109H, One Mile Radius Map of the APD depicts all known wells within a one mile radius of the proposed well.

b. There is no other information regarding wells within a one mile radius.

4. Location of Existing and/or Proposed Production Facilities

a. All permanent, lasting more than 6 months, above ground structures including but not limited to pumpjacks, storage tanks, barrels, pipeline risers, meter housing, etc. that are not subject to safety requirements will be painted a non-reflective paint color, Shale Green, from the BLM Standard Environmental Colors chart, unless another color is required in the APD Conditions of Approval.

b. If any type of production facilities is located on the well pad, they will be strategically placed to allow for maximum interim reclamation, recontouring, and revegetation of the well location.

c. A production facility is proposed to be installed on the proposed well location. Production from the well will be processed on site in the production facility. Location Layout, Figure #1 & Reclamation Diagram, Figure #4 depicts the location of the production facilities as they relate to the well and well pad.

d. The proposed production facility will have a secondary containment structure that is constructed to hold the capacity of 1-1/2 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

e. Preliminary Plot Plan depicts the production facility as well.

If any plans change regarding the production facility or other infrastructure (pipeline, electric line, etc.), we will submit a sundry notice or right of way (if applicable) prior to installation or construction.

Additional Pipeline(s)

We propose to install 2 additional pipeline(s):

1. Buried Gas pipeline:

   a. We plan to install a 12-inch buried Coated Steel pipeline from Proposed Well Pad to the Proposed Facility. The proposed length of the pipeline will be 4693.97 feet. The working pressure of the pipeline will be about 270 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

   b. Pipeline R-O-W depicts the proposed Gas pipeline route.

   c. Since the proposed pipeline crosses lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

2. Buried Water pipeline:

   a. We plan to install a 10-inch buried poly pipeline from Proposed Well Pad to the Proposed Facility. The proposed length of the pipeline will be 4693.97 feet. The working pressure of the pipeline will be about 250 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10-foot-wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

   b. Pipeline R-O-W depicts the proposed Water pipeline route.

c. Since the proposed pipeline crosses lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

3. Buried Oil pipeline:

a. We plan to install a 10-inch buried Coated Steel pipeline from Proposed Well Pad to the Proposed Facility, the proposed length of the pipeline will be 4693.97 feet. The working pressure of the pipeline will be about 270 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

b. Pipeline R-O-W depicts the proposed Gas pipeline route.

c. Since the proposed pipeline crosses lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

4. Buried Gas pipeline:

a. We plan to install an 8-inch buried Coated Steel pipeline from Proposed Well Pad to the Proposed Facility. The proposed length of the pipeline will be 4693.97 feet. The working pressure of the pipeline will be about 1250 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

b. Pipeline R-O-W depicts the proposed Gas pipeline route.

c. Since the proposed pipeline crosses lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

Electric Line(s)

a. The electric was filed with the Zia Hills 19 Pad #1. The proposed length of the electric line will be 1598 feet coming off the Zia Hills Buck CF1 to a tie in point. Power Line R-O-W (already submitted) depicts the location of the proposed electric line route. The electric line will be construction to provide protection from raptor electrocution.

b. The existing power line route to the proposed project does not cross lease or unit boundaries, so a BLM right- of-way grant will not be acquired for this proposed power route.

5. Location and Types of Water

a. The source and location of the water supply are as follows: The water source is from an approved source and a temporary permit to lay the lines will be filed under a separate cover.

b. The water will be from two wells in Texas, the HP 51914 (31.967544°, -103.760114°) and HP 41714 (31.970142°, -103.758269°) that are located in Section 16, Block 51 T1, T&P RR Co., Loving County, TX.

6. Construction Material

a. Clean caliche will be from a BLM source or a third-party provider.

7. Methods for Handling Waste

a. Drilling fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility.

b. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly at a state approved disposal facility. All trash on and around the well site will be collected for disposal.

c. Human waste and grey water will be properly contained and disposed of properly at a state approved disposal facility.

d. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at a state approved disposal facility.

e. The well will be drilled utilizing a closed loop system. Drill cutting will be properly disposed of into steel tanks and taken to an NMOCD approved disposal facility.

8. Ancillary Facilities

a. No ancillary facilities will be needed for this proposed project.

9. Well Site Layout

a. The following information is presented in the well site survey plat or diagram:

i. reasonable scale (near 1":50')

ii. well pad dimensions

iii. well pad orientation

iv. . drilling rig components

v. proposed access road

vi. elevations of all points

vii. topsoil stockpile

viii. serve pit location/dimensions if applicable

ix. other disturbances needed (flare pit, stinger, frac farm pad, etc.)

x. existing structures within the 600' x 600' archaeological surveyed area (pipelines, electric lines, well pads, etc.

b. The proposed drilling pad was staked and surveyed by a professional surveyor. The attached survey plat of the well site depicts the drilling pad layout as staked.

c. The submitted survey plat does depict all the necessary information required by Onshore Order No. 1.

d. Topsoil Salvaging

i. Grass, forbs, and small woody vegetation, such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and respreads evenly on the site following topsoil rereading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

10. Plans for Surface Reclamation

Reclamation Objectives

i. The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.

ii. The long-term objective of final reclamation is to return the land to a condition like what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

iii. The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.

iv. If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed.

v. Interim reclamation will be performed on the well site after the well is drilled and completed. Reclamation Diagram, Figure # 4 depicts the location and dimensions of the planned interim reclamation for the well site. The pad will be reclaimed to 360'x400' (approximately 1.758 acres will be reclaimed leaving the pad at approximately 4.028 acres). The facility portion will not be reclaimed.

Interim Reclamation Procedures (If performed)

1. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.

2. In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.

3. The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

4. Topsoil will be evenly respreads and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting to break the soil crust and create seed germination micro-sites.

5. Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.

6. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

Final Reclamation (well pad, buried pipelines, etc.)

1. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.

2. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.

3. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.

4. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BLM seed mixture, free of noxious weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting to break the soil crust and create seed germination micro-sites.

5. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.

6. All unused equipment and structures including pipelines, electric line poles, tanks, etc. that serviced the well will be removed.

7. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

11. Surface Ownership

a. The surface ownership of the proposed project is Federal.

12. Other Information

a. The following well pad and facility location was staked with Colleen Cepero Rios on April 18th, 2017. Please review this application with the Zia Hills 19 Federal COM 110H, Zia Hills 19 Federal COM 111H, Zia Hills 19 Federal COM 112H, Zia Hills 19 Federal COM 113H, Zia Hills 19 Federal COM 114H, Zia Hills 19 Federal COM 115H, Zia Hills 19 Federal COM 116H. All ROW's will be filed separately.

13. Maps and Diagrams

Access Road Map, TOPO A & Access Road Map TOPO B - Existing Road
One Mile Radius Map - Wells Within One Mile
Location Layout, Figure #1 & Reclamation Diagram, Figure #4 - Production Facilities Diagram
Preliminary Plot Plan - Additional Production Facilities Diagram
Pipeline R-O-W - Gas Pipeline
Pipeline R-O-W - Water Pipeline
Pipeline R-O-W - Oil Pipeline
Pipeline R-O-W - Gas Pipeline
Power Line R-O-W - Electric Line (already submitted)
Reclamation Diagram, Figure # 4 - Interim Reclamation

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**CONOCOPHILLIPS COMPANY**
LEASE NO.:	**NMLC062749B**
WELL NAME & NO.:	**109H –ZIA HILLS 19 FEDERAL COM**
SURFACE HOLE FOOTAGE:	**2498'/N & 1600'/W**
BOTTOM HOLE FOOTAGE	**2618'/S & 1620'/W; 7**
LOCATION:	**Section 19 T.26 S., R.32 E., NMP**
COUNTY:	**LEA County, New Mexico**

COA

H2S	○ Yes	◉ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	○ Medium	◉ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **11 3/4 inch** surface casing shall be set at approximately **1200 feet** (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
    b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

Approval Date: 11/10/2017

c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Operator shall fill 2/3rd of the casing with fluid while running intermediate casing.

2. The minimum required fill of cement behind the **8 5/8 inch** intermediate casing is:

Option 1:

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Additional cement may be required. Excess calculates to be 5%.**

Option 2:

Operator has proposed an with a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job. **Additional cement may be required. Excess calculates to be 0%.**

b. Second stage above DV tool:Cement to surface. If cement does not circulate, contact the appropriate BLM office.

❖ In High Cave/Karst Areas if cement does not circulate to surface on the first two casing strings , the cement on the 3rd casing string must come to surface.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
   - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement may be required. Excess calculates to be -36%.**

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8 5/8** intermediate casing shoe shall be **10,000 (10M)** psi.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. **On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.**

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including

lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes. This test shall be performed prior to the test at full stack pressure.

g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

ZS 103117

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	ConocoPhillips Co
LEASE NO.:	LC062749B
WELL NAME & NO.:	Zia Hills 19 Federal Com – 109H
SURFACE HOLE FOOTAGE:	2498'/N & 1600'/W
BOTTOM HOLE FOOTAGE	2618'/S & 1620'/W, sec. 7
LOCATION:	Section 19, T. 26 S., R. 32 E., NMPM
COUNTY:	Lea County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

Approval Date: 11/10/2017

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Watershed:

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The berm shall be maintained through the life of the well and after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

Tank Battery:

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank. Automatic shut off, check values, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.

- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

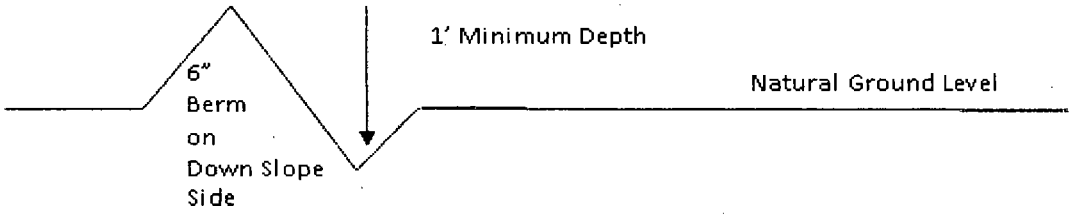
Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Cattle guards
An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement
Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

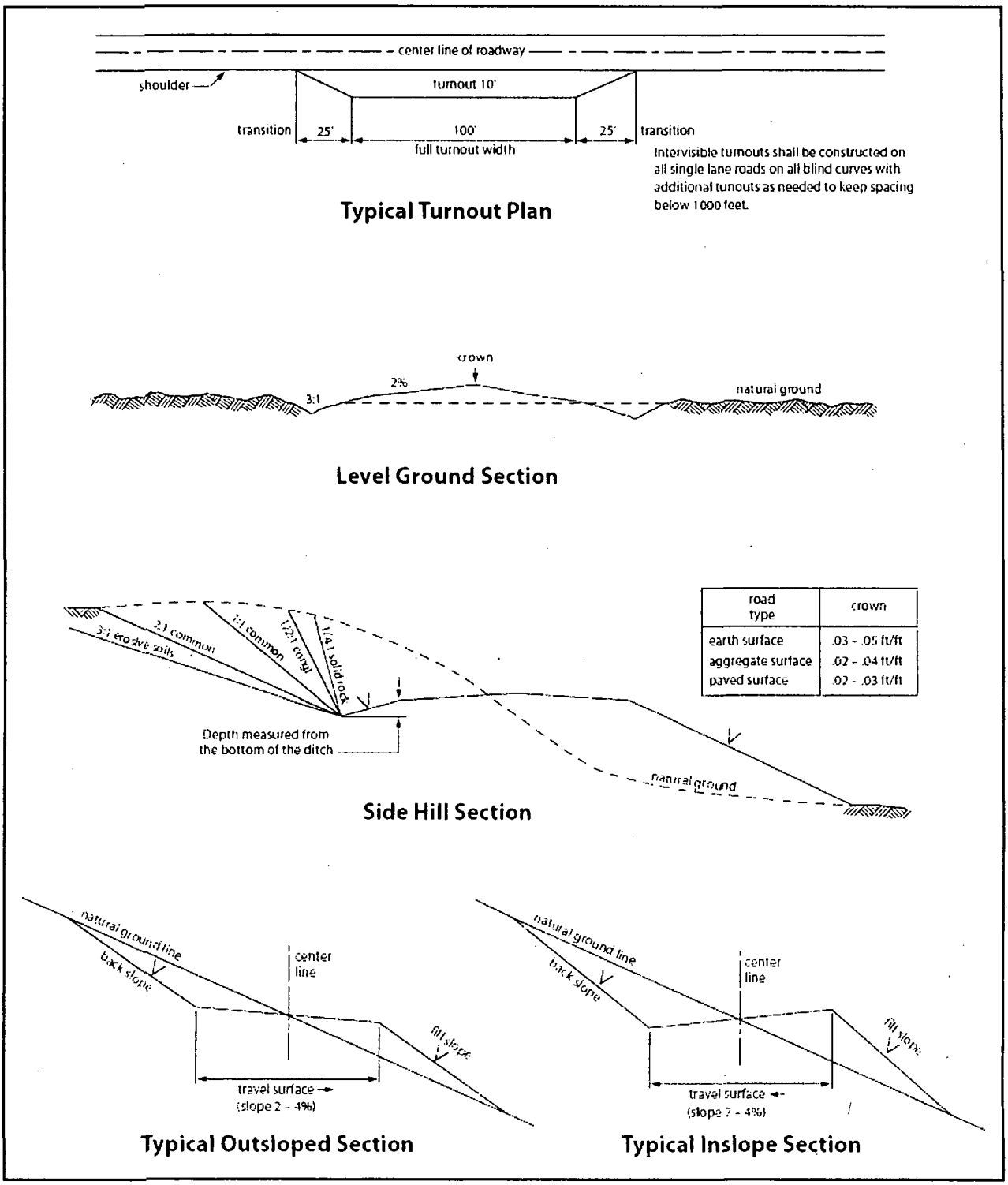


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Approval Date: 11/10/2017

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures
Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of **36** inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be **30** feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **20** feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)

- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed **30** feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)

- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

( ) seed mixture 1 ( ) seed mixture 3

(X) seed mixture 2 ( ) seed mixture 4

( ) seed mixture 2/LPC ( ) Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with

the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the

Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:
- For reclamation remove poles, lines, transformer, etc. and dispose of properly.
- Fill in any holes from the poles removed.

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed